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# Rocky Mountain botany and the Long Expedition of 1820

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With July, 1920, a hundred years had passed since Major Long made his notable expedition to the Rocky Mountains. In the spring of 1819, on May 6th, the expedition left Pittsburgh in a specially constructed steamboat named Western Engineer, and during the summer made its way down the Ohio River, up the Mississippi, and up the Missouri to the mouth of the Platte at Council Bluffs. Here the company wintered and remained till June, 1820, when Major Long arrived, and on the 6th of June the party began its journey up the Platte. Dr. William Baldwin started with the expedition as botanist, but he was seriously ill and died at Franklin on the Missouri, August 21, 1819. With Major Long came Dr. Edwin P. James, who became botanist of the Expedition, and geologist and surgeon, and also its historian. Traveling as rapidly as possible, collecting was a difficult matter, and yet Dr. James was able to make a notable collection of botanical specimens. Not only were the specimens many in number, but there were many of unusual interest because they were new species. Pursh and Nuttall had already discovered and published many of the peculiar plants of the Rocky Mountain region, but Dr. James was first to ascend above timberline and collect among the alpine flora.

On June 22d the Expedition arrived at the junction of the North with the South Platte. The barren and sterile character of the country is often noted, and on the 29th, when in

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the vicinity of where Fort Morgan now is, Dr. James observed: "The cactus ferox reigns sole monarch, and sole possessor, of thousands of acres of this dreary plain. It forms patches which neither a horse nor any other animal will attempt to pass over." On the next day the first glimpse of the Rocky Mountains was noted. Almost the whole of July was passed in the mountains or in their vicinity. The company hoped to reach the mountains for the 4th of July, but the day found them journeying along the South Platte in the vicinity of the mouth of the St. Vrain Creek. "Several valuable plants," Dr. James observes, "were here collected and, among others, a large suffruticose species of lupine." The only species of *Lupinus* which Dr. Torrey described from the collection was *L. decumbens*, and its habitat was said to be, "on the southern branches of the Arkansas." It may have been collected again, but since what I suppose is *L. decumbens* Torr. is quite common in this section, this is probably the species mentioned. July 5th the Expedition camped opposite the mouth of "Cannon-ball Creek," now Boulder Creek, and on July 6th, at noon, camped where the Platte emerges from the mountains, and remained there till the morning of the 9th. Among the many plants collected in this vicinity were *Geranium caespitosum* James, and *Acer glabrum* Torr. On July 11th, as the company halted for the dinner time, our beautiful blue columbine, *Aquilegia coerulea* James, was collected. This was just after crossing the divide toward where Colorado Springs is, and on the afternoon of the same day *Stanleya integrifolia* James was found. On the 12th the company camped on "Boiling-spring Creek," now Fountain Creek, not far from the site of Colorado Springs. "Near this encampment," in the words of Dr. James, "we first observed the great shrubby cactus, which forms so conspicuous a feature in the vegetable physiography of the plains of the Arkansa." Here also he mentions "a cucurbitaceous vine, resembling some of our common squashes, bearing a small pepo, which is round and smooth, and as large as an orange."

On the morning of the 13th Dr. James with two companions left camp to make the "ascent to the summit of the peak," Pikes Peak. They ate dinner at the "boiling spring," Manitou, and "halted at sunset in a small cluster of fir trees," near a brook.

The account continues: "On the morning of the 14th, as soon as daylight appeared, having suspended in a tree our blankets, all our provisions, except about three pounds of bison's flesh, and whatever articles of clothing could be dispensed with, we continued the ascent, hoping to be able to reach the summit of the peak, and return to the same camp in the evening. . . . The day was bright, and the air nearly calm." At about twelve o'clock they arrived at timberline. "A little above the point where the timber disappears entirely, commences a region of astonishing beauty, and of great interest on account of its productions. The intervals of soil are sometimes extensive and covered with a carpet of low but brilliantly-flowering alpine plants." Here was a most interesting moment; new and undiscovered plants—things of the greatest interest to the botanist—were about them, but time and daylight failed. "We met as we proceeded, such numbers of unknown and interesting plants, as to occasion much delay in collecting; and were under the mortifying necessity of passing by numbers we saw in situations difficult of access. . . . It was about 4 o'clock P.M. when the party arrived on the summit. At about five in the afternoon the party began to descend, and a little before sunset arrived at the commencement of the timber." Shortly after they were obliged to stop for the night without reaching the camping place of the preceding evening. On the next morning, Dr. James continues, "we had traveled about three hours when we discovered a dense column of smoke rising from a deep ravine on the left hand." The camp-fire had not been extinguished, and it started a fire which destroyed nearly all the provisions and the bedding and clothing, which had been left at the camp. They arrived a little after noon at the "boiling spring."

This was undoubtedly the most notable day of the Expedition for botanical collecting, both from the standpoint of the number of new species discovered, and from the fact that it was an introduction to the rich and beautiful alpine flora of the central Rocky Mountains. The new plants—nearly all alpine—were: *Apinus flexilis*, *Alsinopsis obtusiloba*, *Heuchera bracteata*, *Telesonix Jamesii*, *Trifolium nanum*, *T. dasyphyllum*, *Oreoxis humilis*, *Primula angustifolia*, *Drosace carinata*, *Mertensia alpina*, *Penstemon alpinus*, *Chionophila Jamesii*, *Castilleja occidentalis*, and *Tetraneuris brevifolia*. *Mertensia ciliata* and *Besseya plantaginea* must have been collected near this date and may have been found about Pikes Peak. The last is Bentham's *Synthyris plantaginea*, but I suppose it was first described by Dr. James in the "Catalogue of Plants" which he contributed to the American Philosophical Society, as *Veronica plantaginea*, though he observed that it was "unlike in habit and appearance to the American Species of *Veronica*." Near this date, too, he must have collected the *Pentstemon* which he lists in the "Catalogue of Plants" as "*P. coccineum* N. S.?", though he offers no descriptlon of it. Evidently it was a bright red *Pentstemon*, and I suppose it was the only one which Bentham later described as *P. Torreyi*.

On July 16th the Expedition moved from the vicinity of Colorado Springs to the bank of the Arkansas river where Pueblo now is. On the 17th Captain Bell with Dr. James and two other men ascended the Arkansas to the present site of Canyon City. Little of interest is noted in botanical collecting for the trip. On the morning of July 19th "we turned our backs upon the mountains, and began to move down the Arkansa." When about a hundred miles down the river the party divided. Captain Bell with the greater part of the Expedition continued down the Arkansas, while Major Long, accompanied by Dr. James and eight other men, turned southward toward the Canadian River. During the journey of the first day, July 24th, at the noon encampment were collected *Rudbeckia* (now *Ratibida*) *Tagetes* James and *Sida* (now *Sphaeralcea*) *stellata* Torr. The next day they came to the Purgatory River, up which they traveled, and camped on its bank or that of a tributary for the night. Dr. James writes: "A beautiful dalea, two or three euphorbias, with several species of eriogonum, were among the plants collected about this encampment. Notwithstanding the barrenness of the soil and the aspect of desolation which so widely prevails, we are often surprised by the occurrence of splendid and interesting productions springing up under our feet, in situations that seemed to promise nothing but the most cheerless and unvaried sterility."

On the 27th they extricated themselves from the rocky canyons of the Purgatory River, where traveling had been exceedingly difficult, and took "without the least regret our final leave of the 'valley of souls in purgatory.'" They came out onto a high table-land, and the next day came to a stream which they came to consider as a tributary of the Canadian River. Under date of July 30th Dr. James wrote: "The country between the sources of the Purgatory creek and the stream on which we are now encamped is a wide and elevated formation of trap rocks, resting on horizontal sandstone. In traversing it we had collected many new and interesting plants. Among these were a large decumbent mentzelia, an unarmed rubus, with species of astragalus, penstemon, myosotis,* helianthus, etc." It would seem quite probable that *Penstemon Jamesii* Benth. was among the pentstemons collected at this time. From Dr. James's descriptions it seems evident that the country traversed during the last few days of July was the southeast part of Las Animas County, Colorado, and adjacent New Mexico; and the first streams encountered were tributary to the Cimmaron River and not to the Canadian. Through this piece of country there is an extensive area of extrusive igneous rock, which is often mentioned in Dr. James's descriptions as trap rock. The plants collected would be indigenous on both sides of the boundary line between Colorado and New Mexico. The reference to "Sources of the Canadian" may apply equally to tributaries of the Cimmaron. After this date many other plants were collected, but the expedition passed eastward, out of the Rocky Mountain region and the plants are more of southern and eastern affinities.

The new species were described by a number of botanists; some by Dr. James, most of them by Dr. Torrey, a few by Torrey and Gray, and a few by the English botanist Bentham. Dr. James furnished a Catalogue of Plants, except the critical species, to the American Philosophical Society, which was "read" August 17, 1821, and published in 1825. Dr. Torrey published most of his new species in the Annals of the New York Lyceum of Natural History, from 1824 to 1826; some of the proceedings seemingly were not published till 1828. Dr. James made his classification according to the Linnaean system, but Dr. Torrey published his "Account" according to the natural system, the first publication so made in the United States.

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* The species of "myosotis" may have been of *Lappula* or *Oreocarpa*.

To know the locations where Dr. James collected many of his specimens is not an easy matter. His "Account" of the expedition is a narrative of its daily progress, and when plants are mentioned in the narrative it is an easy matter to determine the location; but only a few of them are so mentioned. In the published lists no dates are given, and the localities of the new species are often indefinite. While the following list is probably quite incomplete, it is a remarkable list of new species, all or nearly all of them collected as the Expedition crossed the territory now comprised in the state of Colorado; and seemingly the first botanical collection which was made in this territory. The species are arranged according to the sequence in Rydberg's "Flora of the Rocky Mountains and adjacent plains," published in New York, 1917, the names follow this work throughout with the original synonyms cited where necessary.

*Andropogon Torreyanus* Steud. (*Andropogon glaucus* Torr. not Muhl.)
*Pleuraphis Jamesii* Torr.
*Aristida fasciculata* Torr.
*Sporobolus airoides* Torr. (*Agrostis airoides* Torr.)
*S. cryptandrus* (Torr.) A. Gray (*Agrostis cryptandra* Torr.)
*Apinus flexilis* (James) Rydberg (*Pinus flexilis* James)
*Populus angustifolia* James
*Celtis reticulata* Torr.
*Eriogonum umbellatum* Torr.
*E. Jamesii* Benth.
*E. tenellum* Torr.
*Quamoclidion multiflorum* Torr. (*Oxybaphus multiflorus* Torr.)
*Paronychia Jamesii* T. & G.
*Alsine Jamesiana* (Torr.) Heller (*Stellaria Jamesiana* Torr.)
*Alsinopsis obtusiloba* Rydb. (*Arenaria obtusa* Torr. not All).
*Aquilegia coerulea* James
*Stanleya integrifolia* James
*Cristatella Jamesii* T. & G.
*Heuchera bracteata* (Torr.) Seringe (*Tierella bracteata* Torr.)
*Telesonix Jamesii* (Torr.) Raf. (*Saxifraga Jamesii* Torr.)
*Edwinia americana* (T. & G.) Heller (*Jamesia americana* T. & G.)
*Opulaster monogyna* (Torr.) Kuntze (*Spiraea monogyna* Torr.)
*Oreobatus deliciosus* (Torr.) Rydb. (*Rubus deliciosus* Torr.)
*Hoffmannseggia Jamesii* T. & G.
*Lupinus argentea* Pursh (*L. decumbens* Torr.)

*Trifolium nanum* Torr.
*T. dasyphyllum* Torr.
*Parosela formosa* (Torr.) Vail (*Dalea formosa* Torr.)
*P. Jamesii* (Torr.) Vail (*D. Jamesii* Torr.)
*Astragalus mollissimus* Torr.
*Geranium caespitosum* James
*Tragia ramosa* Torr.
*Acer glabrum* Torr.
*Sphaeralcea cuspidata* Torr. (*Sida cuspidata* Torr.)
*Frankenia Jamesii* Torr.
*Oenothera Jamesii* T. & G.
*Anogra coronopifolia* (T. & G.) Britton (*Oenothera coronopifolia* T. & G.)
*Galpinsia lavendulaefolia* (T. & G.) Small (*Oenothera lavendulaefolia* T. & G.)
*Gaura parvifolia* Torr.
*Primula angustifolia* Torr.
*Drosace carinata* (Torr.) A. Nels. (*Androsace carinata* Torr.)
*Asclepias speciosa* Torr.
*A. latifolia* (Torr.) Raf. (*A. obtusifolia* var. *latifolia* Torr., *A. Jamesii* Torr.)
*Gilia longiflora* (Torr.) G. Don (*Cantua longiflora* Torr.)
*Phacelia integrifolia* Torr.
*Oreocarya suffruticosa* (Torr.) Greene (*Myosotis suffruticosa* Torr.)
*Mertensia ciliata* (Torr.) Don (*Pulmonaria ciliata* Torr.)
*M. alpina* (Torr.) Don (*P. alpina* Torr.)
*Phyla cuneifolia* (Torr.) Greene (*Zapania cuneifolia* Torr.)
*Melosmon laciniatum* (Torr.) Small (*Teucrium laciniatum* Torr.)
*Scutellaria resinosa* Torr.
*Quincula lobata* (Torr.) Raf. (*Physalis lobata* Torr.)
*Solanum Jamesii* Torr.
*Penstemon alpinus* Torr.
*P. Jamesii* Benth.
*P. ambiguus* Torr.
*P. Torreyi* Benth.
*Chionophila Jamesii* Benth.
*Besseya plantaginea* (Benth.) Rydb. (*Synthyris plantaginea* Benth.)
*Castilleja occidentalis* Torr.
*Plantago eriopoda* Torr.
*Vernonia marginata* (Torr.) Raf. (*V. altissima* var. *marginata* Torr., *V. Jamesii* T. & G.)
*Isocoma pluriflora* (T. & G.) Greene (*Linosyris pluriflora* T. & G.)

*Tonestus pygmaeus* (T. & G.) A. Nels. (*Stenotus pygmaeus* T. & G.)

*Leucelene ericoides* (Torr.) Greene (*Inula ericoides* Torr.)

*Ratibida Tagetes* (James) Barnh. (*Rudbeckia Tagetes* James)

*Thelosperma gracile* (Torr.) A. Gray (*Bidens gracilis* Torr.)

*Tetraneuris brevifolia* Greene (*Actinea integrifolia* Torr. not Kunth)

*Gaillardia pinnatifida* Torr.

*Pectis angustifolia* Torr.

*Artemisia filifolia* Torr.

*Ptiloria tenuifolia* (Torr.) Raf. (*Prenanthes tenuifolia* Torr.)

*P. pauciflora* (Torr.) Raf. (*Prenanthes pauciflora* Torr.)

In general the native plants still grow and blossom as they did when Dr. James saw them in 1820; but a great change has been wrought in the country. Fruitful farms have replaced much of what seemed to be sterile soil, and towns and cities and a busy industry have come to their silent and uninhabited plains and hills.

WINDSOR, COLORADO